Storage & Server IO

Amphenol

PCI Express® Gen 6 DirectAttached™ CEM Card Edge Connectors

64GB/S NRZ DIFFERENTIAL SIGNALING FOR NEXT-GENERATION SYSTEMS

The PCI Express® Gen 6 DirectAttached™ CEM Card Edge Connectors from Amphenol offer superior performance for next-generation systems. The 1.0mm pitch DirectAttached™ CEM (DA CEM) is a hybrid card edge solution with high-speed signal pins designed to directly attach to the cable, limiting PCB trace loss and features press-fit termination power pins for improved rework. These connectors provide signal integrity loss enhancement of 0.5db to 1.0db compared to conventional PCIe® riser card solutions when paired with a PCIe® riser cable.

While the connector footprint differs from standard PCIe® CEM, the mating interface fulfills standard PCIe® AIC specifications and assures backward compatibility with Gen 5/4/3/2/1. The product is tooled with available configurations for X8 and X16 at a 64Gb/s data rate to fulfill PCIe® Gen 6 standards. It is suitable for a variety of markets, including Desktop PCs, Servers, Workstations, Industrial PCs, and Non-PC applications.



TARGET MARKETS



- Backward mating compatible with Gen 5/4/3/2/1 and meets standard PCIe® interface
- Wide range of positions available, X8 and X16 are tooled
- Flexible mounting ears to meet different customer requirements
- 3 options are available for various application requests: 1pcs solution, 2pcs solution and fully cable out

FEATURES

- Support X8, X16 standard links as per PCI-SIG CEM specification
- Backward mating following PCIe® CEM standards
- High-speed pins designed to directly attach to cable
- RoHS compliant
- Low-halogen material

BENEFITS

- Provides excellent performance and additional options for extreme bandwidth application
- Outperform Gen 6 specification, but also backward mating compatible to Gen 1/2/3/4 /5 specification
- Eliminate the PCB trace signal loss
- Meets environmental, health and safety requirements
- Meets next-generation requirements

TECHNICAL INFORMATION

MATERIAL

- Contact Base Metal: Copper Alloy
- Contact Area Finish: Gold over Nickel
- Solder Area Finish: Tin over Nickel
- Housing Material: High-temperature thermoplastic (UL94V-0) for reflow soldering or thermoplastic (UL94V-0) for wave soldering. Color: Black or off-white
- Metal Board Locks: Copper Alloy

MECHANICAL PERFORMANCE-WTB CONNECTORS

- Durability Rating: 50 cycles min.
- PCB Insertion Force: 1.15N max. per contact pair
- PCB Removal Force: 0.15N min. per contact pair

ELECTRICAL PERFORMANCE

- Contact Resistance: 30m max. initially with 10m max. change after environmental exposures
- Current Rating: 1.1A min. per pin for the 8 power pins and 8 nearest ground pins
- Signal Integrity Summary
- The part series shown on this datasheet support PCI Express® high speed electrical requirements for 2.5Gb/s (PCIe® Gen 1), 5.0Gb/s (PCIe® Gen 2) , 8.0Gb/s (PCIe® Gen 3), 16.0Gb/s (PCIe® Gen 4) and 32.0Gb/s (PCIe® Gen 5), and 64Gb/s (PCIe® Gen 6) with the exception of those part series specifically noted as PCIe® Gen 1 in the part number tables

PACKAGING

- Hard or Soft Tray

APPROVALS AND CERTIFICATIONS

- CSA

SPECIFICATIONS

- Industry
  - PCI Express® Card Electromechanical Specification
  - PCI Express® Module Electromechanical Specification
  - For more information on the applicable PCI-SIG specifications, visit www.pcisig.com
- Amphenol
  - GS-12-1406 PCI Express® group of connectors

ENVIRONMENTAL

- EIA-364-1000.01. The test groups/sequences and durations are derived from the following requirements:
- Durability (mating/unmating) rating of 50 cycles
- Field Temperature: 65°C
- Field Life: Seven years
- Temperature Life (preconditioning): 92 hours at 105°C
- Temperature Life: 168 hours at 105°C
- Mixed Flowing Gas: 10 days

TARGET MARKETS/APPLICATIONS



Desktop
PCs
Servers
Server Riser
Workstations



Desktop PCs
Industrial PCs
Notebook PCs
Solar Panel Inverter



Respirators

Disclaimer
Please note that the above information is subject to change without notice.

TECHNICAL INFORMATION

SI PERFORMANCE

DA CEM PCIe® Gen 6 SI simulation performance meet @ 64Gb/s

PART NUMBERS

Description	Performance	Termination	Position	Part Numbers	Solution Option
PCIe® Gen 6	64Gb/s	DA CEM x8	98 pos	CEMDA098003020X	1pcs Solution
PCIe® Gen 6	64Gb/s	DA CEM x16	164 pos	CEMDA164003020X	1pcs Solution
PCIe® Gen 6	64Gb/s	DA CEM x8	98 pos	CEMDA098003020X	2pcs Solution
PCIe® Gen 6	64Gb/s	DA CEM x16	164 pos	CEMDA164003020X	2pcs Solution
PCIe® Gen 6	64Gb/s	DA CEM x8	98 pos	CEMDA098003020X	Fully Cable Out Solution
PCIe® Gen 6	64Gb/s	DA CEM x16	164 pos	CEMDA164003020X	Full Cable Out Solution

Find part number details using the search box on www.amphenol-cs.com

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